Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

TITLE V DRAFT PERMIT NO. V-02-011
VANDERBILT CHEMICAL CORPORATION & VANDERBILT MINERAL CORPORATION
MURRAY, KENTUCKY 42071
DECEMBER 6, 2001
JAMES A. NEAL, REVIEWER
PLANT I.D. # 21-035-00008
APPLICATION LOG # F929(50724)/53350/54281

SOURCE DESCRIPTION:

R.T. Vanderbilt Company operates Vanderbilt Chemical Corporation and Vanderbilt Mineral Corporation in Murray Kentucky. The chemical plant manufactures organic and organo-metallic chemicals used for, lubricant additives, rubber accelerators, antioxidants, pesticide, and paint additives. Most of these chemicals are members of the dithiocarbamate, dithiophosphate, imiadiazole, thiadiazole or phenanthroline families. The plant uses reactors, boilers, blenders, centrifuges, condensers, decanters, stills and organic and inorganic storage tanks support production. Reactants include amines, diamines, disulfides, phosphoric acids, peroxides, and strong acids, hydroxides and metal oxides of lead, antimony, molybdenum and zinc. Processing aids include various alcohols. Butanol is used as a carrier of the paint additive. A typical batch cycle may require up to 24 hours. Some products are blended, dried, packaged or mixed with mineral oils to form concentrates.

The mineral plant produces different grades of high quality clay under the trade name VeeGum7 or Vangel7.

Other activities that contribute to production, but are considered insignificant activities for the different plants are addressed in Section C of the draft permit.

Pursuant to Log # F929/54281, production of Molvan 2000 at Area 11 is an insignificant source. Vanlube 972 production , log number # F929/50724. Log numbers 50724 and 54281 are part of the Title V operating permit application.

COMMENTS:

The EPA tanks program was used to estimate VOC emissions for all storage tanks and was provided by the applicant. Other emissions are based on material balance, stack tests or AP-42 emission factors.

Vanderbilt is a major source of VOC emissions. However, Calloway County is attainment for ozone (VOCs).

The source notified the Division on November 13, 2000, that is would begin production of benzyl zimate production in the following areas: A12, A14, A17, A17a, and A20, using existing production and air pollution control equipment. The permit requires that records be maintained on the weight and identification of products per production area.

The permit applications listed below have incorporated into 50724: 53350, 53831, and 54281.

Applicable regulations:

The Spray Dryer, EIS AS (84-485-01) is subject to 401 KAR 59:010, *New process operations* and 40 CFR 60, Subpart UUU, *Standards of Performance for Calciners and Dryers in Mineral Industries*. The more stringent of these regulations is Subpart UUU. Particulate matter (PM) emission limits and opacity limits are 0.057 g/dscm and 10%, respectively. A wet scrubber provides PM control and is one of several that are required by the Subpart. Section E of the Title V operating permit lists the operating parameters for the pressure drop and the VG - 6 scrubber liquid flow rate that is required by Subpart UUU.

401 KAR 60:005. (40 CFR 60 Subpart Ka, *Standards of Performance for Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and prior to July 23, 1984*) applies to some storage tanks through out the plant.

401 KAR 60:005 (40 CFR 60 Subpart Kb, *Standards of Performance for Volatile Organic Liquid Storage Vessels for which Construction, Reconstruction, or Modification Commenced after July 23, 1984)* applies to some storage tanks through out the plant

401 KAR 61:050, *Existing storage vessels for petroleum liquids.*

401 KAR 63:020, *Potentially hazardous matter or toxic substances.*

401 KAR 59:010, *New process operations*, applies to emission units constructed on or after July 2, 1975.

401 KAR 61:015, *Existing indirect heat exchangers*, for this regulation, "Classification date" means: April 9, 1972 for affected facilities with a capacity of 250 million BTU per hour heat input or less.

401 KAR 59:015, *New indirect heat exchangers*, for this regulation, "Classification date" means: April 9, 1972 for affected facilities with a capacity of 250 million BTU per hour heat input or less with respect to particulate emissions and sulfur dioxide emissions.

Regulations Not Applicable:

401 KAR 60:005 (40 CFR Subpart K, *Standards of Performance of Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and prior to May 19, 1978*) is not applicable since no storage vessels were constructed during the applicability period.

401 KAR 60:005 (40 CFR 60 Subpart VV, *Equipment Leaks of VOC from SOCMI process vents)* is not applicable to any process unit because none produce chemicals listed in the table of 40 CFR 60, Subpart VV.

401 KAR 63:002 (40 CFR Subpart G, *Hazardous Air Pollutant emissions from SOCMI process vents, Storage Vessels, Transfer Operations, and Waste Water*) is not applicable to any process unit because none produce chemicals listed in Table 1 of 40 CFR 63, Subpart F as a primary product.

401 KAR 63:002 (40 CFR Subpart H, *Hazardous Air Pollutant emissions from equipment leaks*) is not applicable to any process unit because none produce chemicals listed in Table 1 of 40 CFR 63, Subpart F as a primary product.

401 KAR 60:005 (40 CFR 60 Subpart RRR, *Standards of Performance for Volatile Organic Compound (VOC) emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes*) is not applicable to any process unit because none produce the chemicals listed in 40 CFR Subpart RRR as a primary product.

401 KAR 63:002 (40 CFR 63, Subpart MMM, *Pesticide active ingredient production* is not applicable since production of a pesticide active ingredient (PAI) is below 50 percent of the actual production levels for all process units for three (3) years, and will below 50 percent of the maximum potential production levels for all process units for the foreseeable future.

EMISSION AND OPERATING CAPS DESCRIPTION: NA

OPERATIONAL FLEXIBILITY: NA

PERIODIC MONITORING:

No applicable federal or state regulations require a minimum efficiency for any air pollution control device associated with any of Vanderbilt's process emission unit reactor, condenser, centrifuge, blender, decanter, storage tank, still, transfer point or dryer. However, process areas and associated emission units do have air pollution control equipment to reduce emissions below required standards. Key scrubber parameters should be monitored to ensure proper efficiencies regardless of the process. Key parameters include fluid flow rate, differential pressure across the scrubber column and , in some cases, the pH of the scrubber fluid. These parameters are to be monitored and recorded once per shift. Scrubber systems are identified in A-16, A-17, A-20 and A-21. Tables in **Section B, Item 7**, Specific **Control Equipment Operating Conditions** and **Section E** of the Title V operating permit identify the specific operating parameters listed above.

CREDIBLE EVIDENCE:

This permit contains provisions which require specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has not incorporated these provisions in its air quality regulations.